

# HDMI 16 by 16 Matrix Switcher

## AT-HD-V1616M



## User Manual



# Table of Contents

1. Introduction	3
2. Package Contents	3
3. Features	3
4. Specifications	4
5. Control and Functions	
a. Front Panel	4
b. Back Panel	5
c. Panel Control	5
6. IR Remote Control	6
7. TCP/IP	6
a. set up	7
8. RS-232	8
9. EDID	9
10. Connections	10
11. Safety	11
12. Warranty	12
13. Registration	13

## AT-HD-V1616M

Atlona HDMI 16 by 16 Matrix Switcher

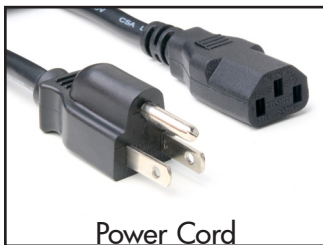


### Introduction

16 inputs, 16 outputs, HDCP compliant, EDID learning capability, RS-232 control option, and 9 programmable memory presets, The Atlona HDMI 16 by 16 Matrix Switcher has something for most of your professional needs. The Atlona AT-HD-V1616M is compatible with all current HDMI to DVI sources and will support resolutions up to 1920x1200 or 1080p.

### Package Contents

- 1 x AT-HD-1616M
- 2 x Power Cord
- 1 x RS-232 male to female cable
- 1 x IR receiver module
- 1 x IR remote control
- 1 x User Manual



Power Cord



IR Receiver Module



RS-232 cable

### Features

- HDCP compliant for seamless connection with HDMI to DVI sources
- Fully supports 3D
- 9 programmable memory presets for quick switching to the most used settings
- EDID allows for compatibility between any source and display with learning feature
- RS-232 compatible
- TCP/IP control enabled
- CEC capable
- Equalized ports to support up to 50 feet (15.24 meters) long HDMI cables. Supports longer cables with HDMI extenders
- Redundant desktop power supply keeps your switcher running in the event the main power supply fails
- Fast selection, switching time on average runs between 0.5 and 2 seconds. Switching time varies with different displays.
- Mountable with 3RU Racks
- Dolby TrueHD and DTS-HD Master Audio supported

## AT-HD-V1616M

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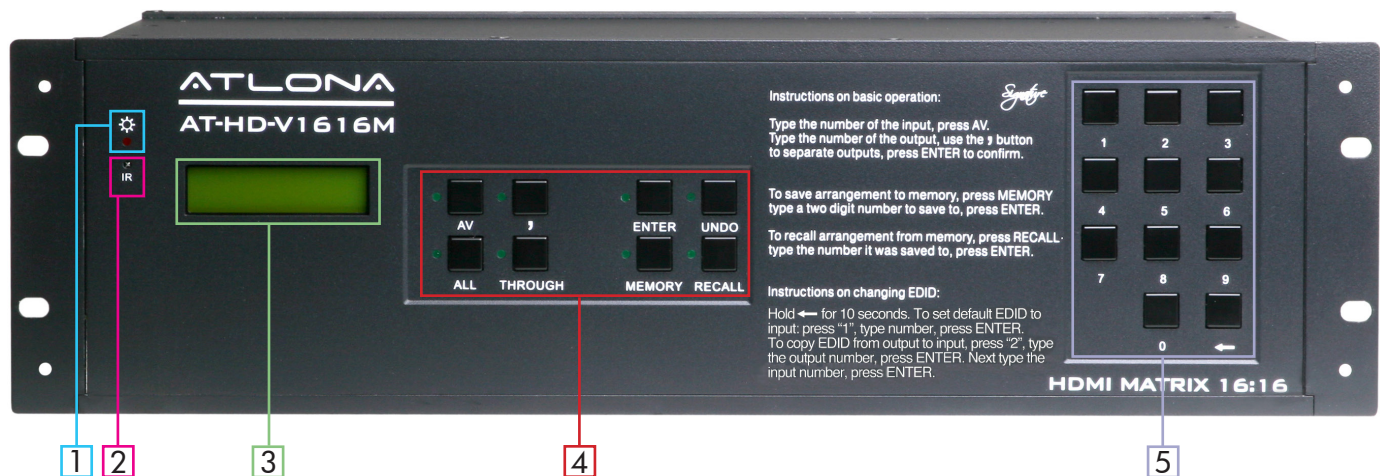


### Specifications

Bandwidth frequency	10.2 Gbps (340 MHz)
Input Ports	16 HDMI (Female Type)
Output Ports	16 HDMI (Female Type)
	1 RS-232 port
	1 IR 3.5mm port
	1 Ethernet port
Resolution outputs	Video: 480i, 576i, 1080i 480p, 576p, 720p, 1080p 1080p@60Hz Vesa: 640x480, 768x576, 800x600, 1024x768 1280x960, 1400x1050, 1600x1200, 1920x1200
Dimensions (HxWxD)	5.22x17.03x12.6 (inch) or 132.5x432.6x320 (mm)
Weight	15.43lbs or 7kg
Temperature	-4°F to 158°F or -20°C to 70°C
Power consumption	25W

### Controls and Functions

#### Front



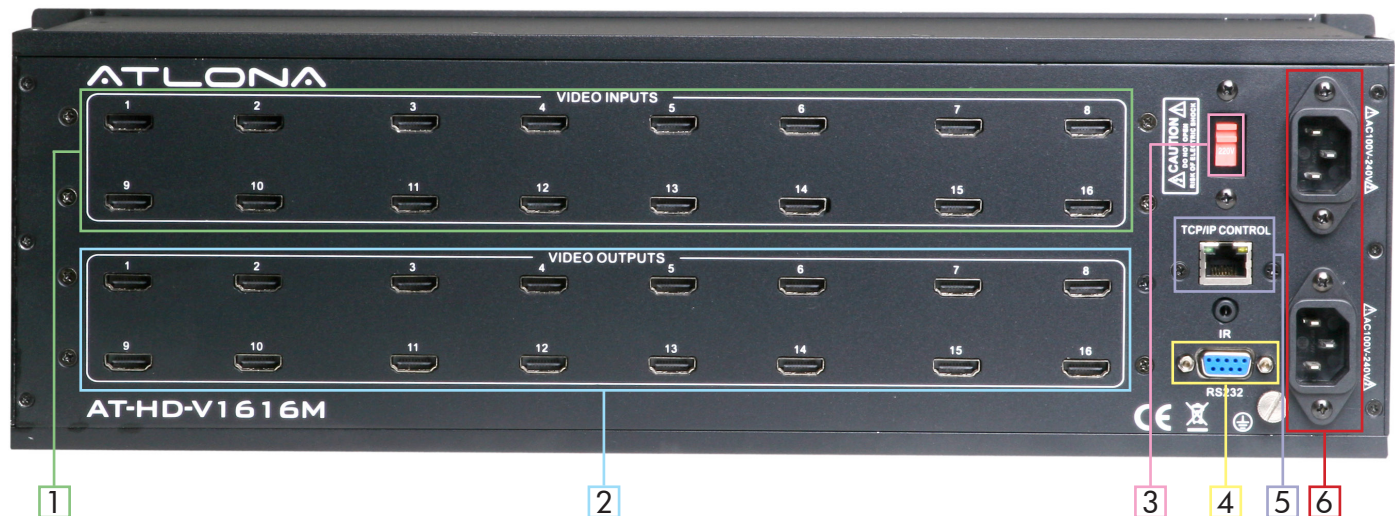
1. Power Indicator. Red LED will light up when power is on.
2. IR Receiver. Point your included IR remote control for the matrix switcher to receive commands
3. LCD Display. Displays commands and status messages
4. Menu for switching inputs, outputs, and functions
5. Menu for selecting inputs and outputs for your menu selections

## AT-HD-V1616M

Atlona HDMI 16 by 16 Matrix Switcher



[Back](#)



1. Video Inputs. Sources such as DVD players and computers should be connected here.
2. Video Outputs. Video displays should be connected here.
3. Power Regulator. Switch between 110V (US standard) and 220V (EU base standard).
4. RS-232 connector. Connect included RS-232 cable here if you wish to control your switcher by PC or 3rd party controller
5. TCP/IP connector. Connect to your switcher through a network by connecting an Ethernet cable here.
6. Primary and Secondary Power Supply. Connect included power cables here.

### Panel Control

- AV : Used to select input to output. Example: Input 3 to output 5 - Press 3 then AV then 5 (displays as 3AV5 on the LCD display)
- "," : Select multiple outputs with this. Example: Input 1 to output 3-5. Press 1 then AV then 3,4,5 (displays as 1AV345)
- ALL : Press to connect all outputs for an input. Example: Input 2 to all outputs. Press 2ALL
- Through : Sends inputs to corresponding outputs. Example: Input 4 to output 4. Press 4Through
- Memory: Save the current settings for the switcher to create a preset between 0-9. Press Memory3 to save as preset 3
- Recall: Uses saved presets that you've created. Press Recall3 to pull up what you saved with Memory3
- Undo: Goes back one step, if you've changed the wrong item and want it to go back to what it was press undo
- Enter: Used to end each selection. Example: 3AV5, press enter after to confirm your choice
- <--: Used for EDID selection or as a backspace. Hold for 10 seconds for EDID commands

## AT-HD-V1616M

Atlona HDMI 16 by 16 Matrix Switcher



### IR Remote Control



#### Input Selection:

Press the number corresponding with the input you wish to select, for numbers 10 and above select 10+ and the number following. Example: 10 = 10+ and 0

#### Menu Selection:

Choose the action you wish to perform. At this time with just the AT-HD-V1616M the only menu items you will use are AV and ALL. Example: Input 3 with output 5. Press #3 in the input section, press AV, and then press #5 in the output section. The LCD display will show the input as 3B5 on its screen.

#### Output Selection:

Press the number of the corresponding output (display) you wish to select. For numbers 10 and above, select 10+ and the number following. Example: 13 = 10+ and 3

#### Note:

Multiple outputs are not selectable through the IR Remote control at this time. They are available through the front panel and RS-232 controls.

### TCP/IP

TCP/IP is another way to control your AT-HD-V1616M. Connect with an ethernet cable to your network or computer. After connecting the cable you'll need to configure the IP on your computer.

IP address: 192.168.0.178

Subnet mask: 255.255.255.0

Default gateway: 192.168.0.1

Preferred DNS: 202.96.134.133

Alternate DNS: 202.96.128.68



Use a straight cable to connect to a router or network.



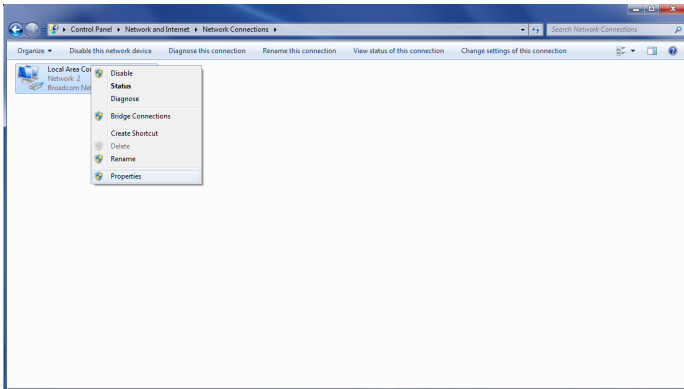
Use a crossover cable to connect directly to a computer.

## AT-HD-V1616M

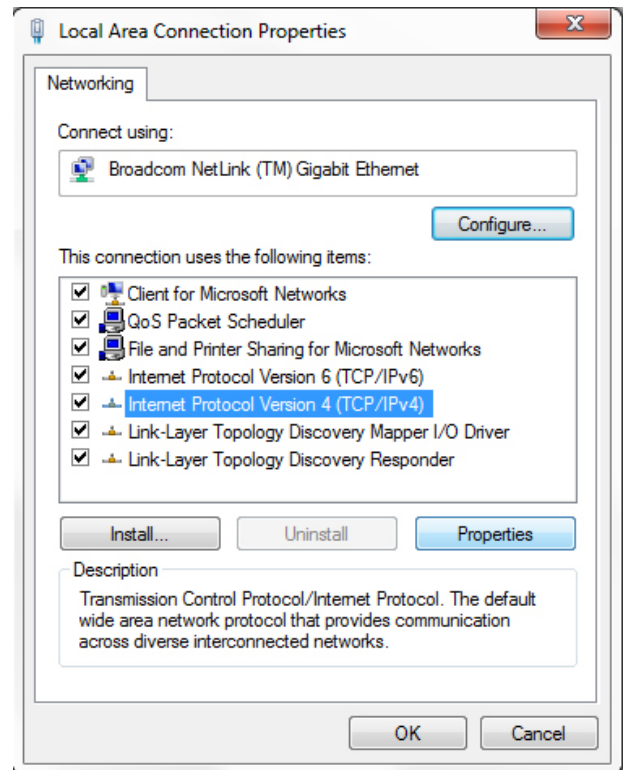
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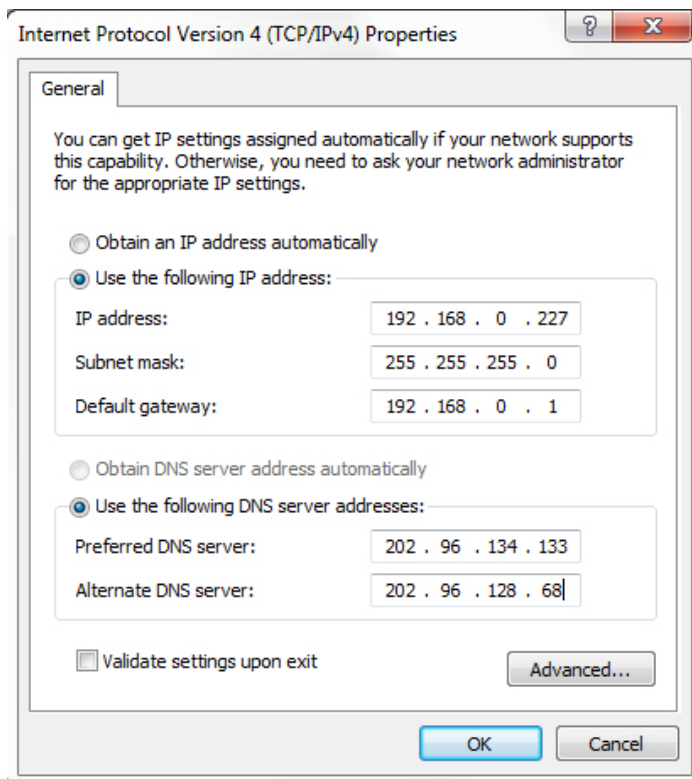
### TCP/IP Set Up



Go to the Network Connections folder and right click on the connection you would like to edit. Select Properties.



Find Internet Protocol in your list. There will be either Version 4 or 6, if there are both protocols choose Version 4. Once highlighted click on the properties buttons below the list box.



Once the window comes up enter in the IP address, subnet mask, default gateway, preferred DNS server and alternate DNS server information into each field. This will enable TCP/IP control.

IP address: 192.168.0.178  
Subnet mask: 255.255.255.0  
Default gateway: 192.168.0.1

Preferred DNS server: 202.96.134.133  
Alternate DNS server: 202.96.128.68

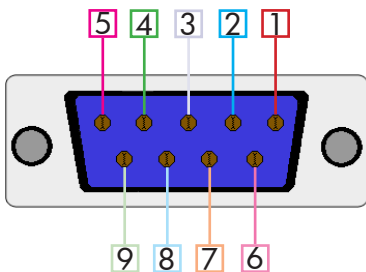
## AT-HD-V1616M

Atlona HDMI 16 by 16 Matrix Switcher

## RS-232

### Connection

RS-232 is connected through a 9-pin female D connector. The pins will have functions associated with them, some will be unassigned.



No.	Pin	Function
1	----	Not used
2	Tx	Transmit
3	Rx	Receive
4	----	Not used
5	Gnd	Ground
6	----	Not used
7	----	Not used
8	----	Not used
9	----	Not used

Baud Rate: 9600bps

Data Bit: 8bits

Parity: None

Stop Bit: 1bit

### Command

System Command Codes	Functions
/*Type;	Brings up the model information
/%Lock;	Locks the front panel of the Matrix switcher
/%Unlock;	Unlocks the front panel of the Matrix switcher
/^Version;	Brings up the firmware's version

The command codes are very sensitive, do not change capitalization, spacing, or lettering.

Command	Feedback	Description
PWON	PWON	Power on
PWOFF	PWOFF	Power off
All#	All#	Resets all inputs to corresponding outputs (in3 to out3)
x1\$	x1\$	Turns off output channel (to turn off output 3 = x3\$)
x1AVx2	x1AVx2	Switch input to output (input 3 to output 5 = x3AVx5)
x1AVx2,x3,x4	x1AVx2,x3,x4	Switch input to multiple outputs (input 3 = x3AVx1,x2)
Statusx1	x7AVx1	Shows what input is connected to selected output
Status	x1AVx1, x2AVx2, x3AVx4, ....	Displays which inputs are currently connected to which outputs
Save[Y]	Save2	Saves settings for future use, saves vary from 0 to 9
Recall[Y]	Recall2	Pulls up saved settings for the number you selected
Clear[Y]	Clear2	Erases the save for the number you selected
Mreset	Mreset	Sets matrix back to the default settings

Each command or feedback is terminated with a carriage return.

**Note:** If the command fails or is incorrect the feedback should be "Command FAILED"

## AT-HD-V1616M

Atlona HDMI 16 by 16 Matrix Switcher



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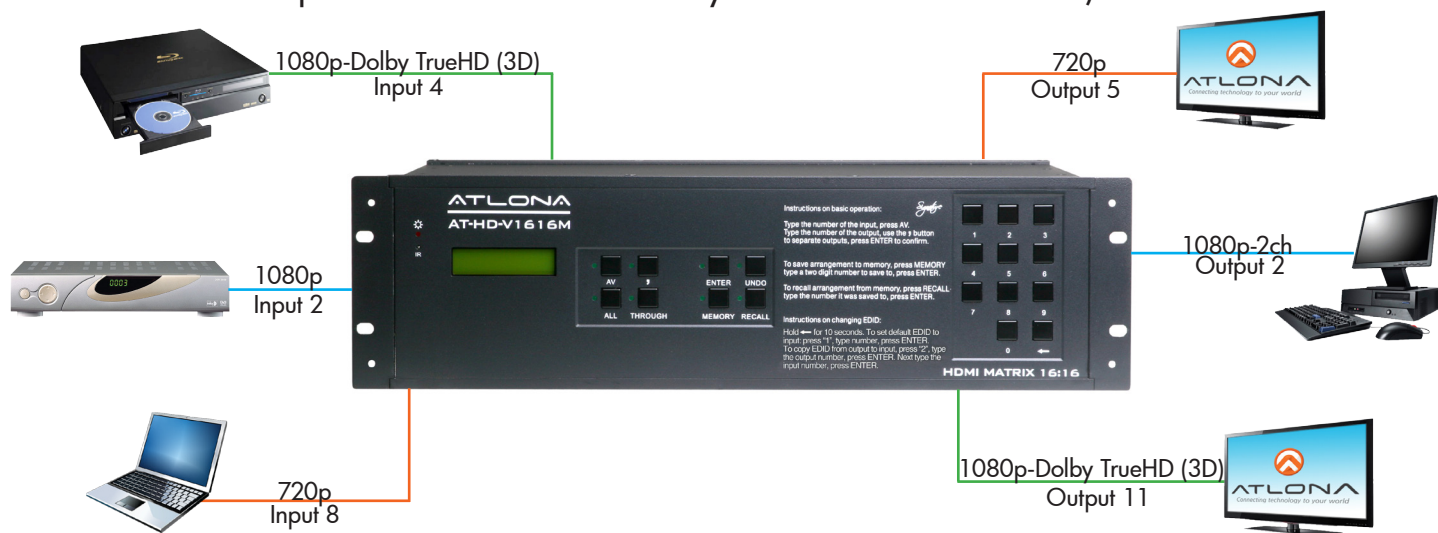
### EDID (Extended Display Identification Data)

Edid is the standard compatibility signal passed between most sources and video displays. It allows the devices to make sure they support the same resolutions and timing.

The AT-HD-V1616M has two EDID settings: default and learning. Default saves the settings of 1080p resolution and 2 channel audio to all outputs. The learning setting will allow for the copying of an output's EDID to specific inputs.

#### Default

Default is used for when all displays support 1080p and 2 channel audio. If a display does not support this resolution then it will show only a black screen. (i.e. Output5 having the native resolution of 720p would cause it to show only a black screen in default)



#### Learning

Learning EDID allows for the resolution and audio formats of a display to be saved to an input source. Once this setting is saved it will only output that resolution and audio, which will cause a black screen to display on any output that does not support the same settings.

I.E. If you save the settings of output11 to input4, input4 will only display 1080p and Dolby TrueHD audio, which means output5 would receive no audio or video and output2 would receive no audio.

If the settings of output11 to input4 are saved with 3D only 3D capable devices will be able to get picture with input4. Input4 will be saved to 3D and a separate Blu-ray or DVD player will be needed to be used with outputs incapable of 3D. Input4 will no longer be able to show anything but 3D and will not play in any other resolutions.

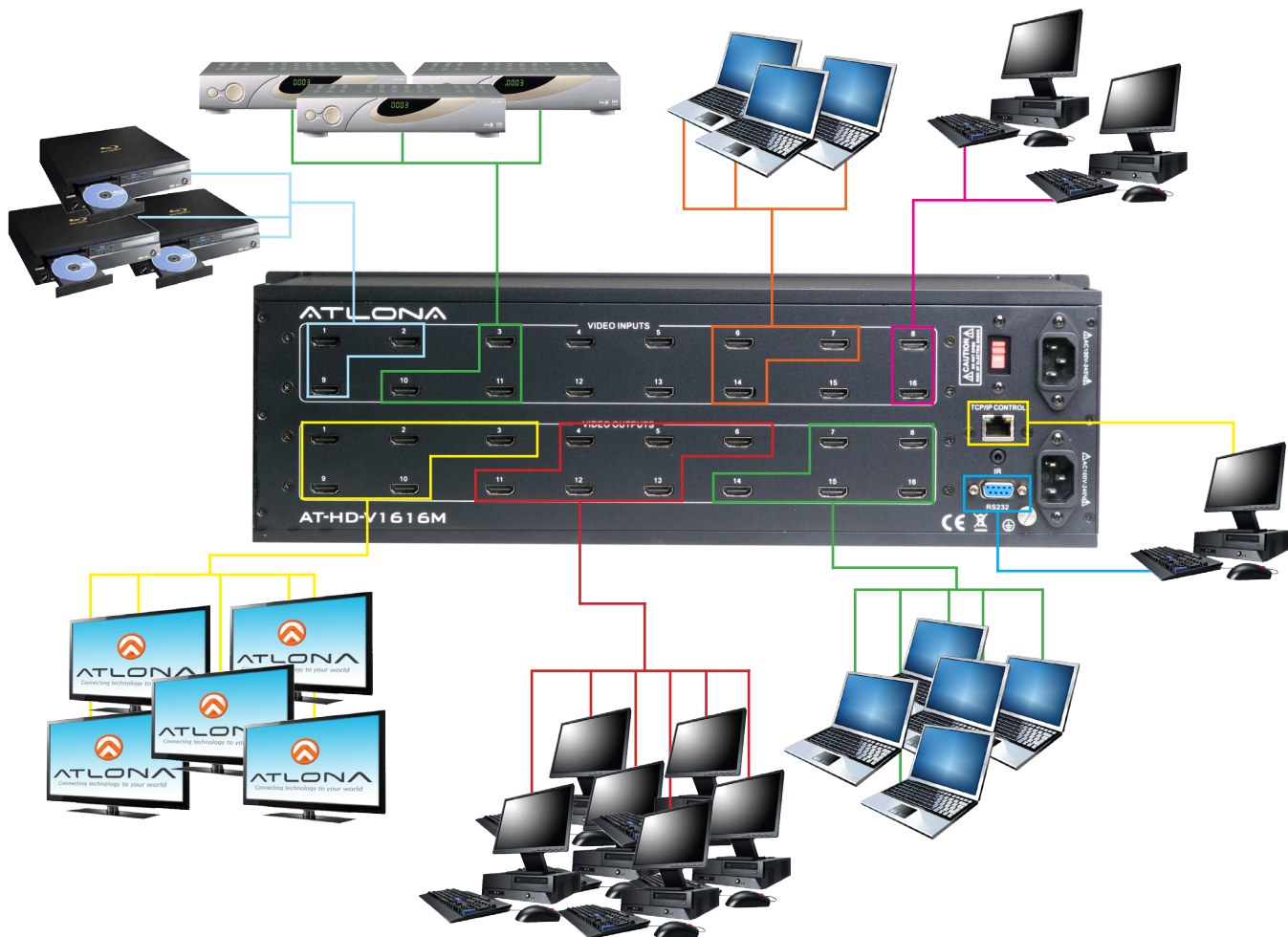
In the above diagram, output5 can be saved to all 3 inputs allowing all three outputs to use the devices at 720p (most displays have multiple resolution capabilities. Outputs 2 & 11 however can only be saved to inputs 2 & 4 as their native resolutions are 1080p and input 8 is incapable of producing that resolution without a scaler.

# AT-HD-V1616M

Atlona HDMI 16 by 16 Matrix Switcher



## Connections



## Safety Information

### Safeguards



To reduce the risk of electric shock, do not expose this product to rain or moisture



Do not modify the wall plug. Doing so will void the warranty and safety features.



If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.



This equipment should be installed near the socket outlet and the device should be easily accessible in the case it requires disconnection.

### Precautions

FCC regulations state that any unauthorized changes or modifications to this equipment, not expressly approved by the manufacturer, could void the user's authority to operate this equipment.

Operate this product using only the included external power supply. Use of other power supplies could impair performance, damage the product, or cause fires.

In the event of an electrostatic discharge this device may automatically turn off. If this occurs, unplug the device and plug it back in.

Protect and route power cords so they will not be stepped on or pinched by anything placed on or against them. Be especially careful of plug-ins or cord exit points from this product.

Avoid excessive humidity, sudden temperature changes or temperature extremes.

Keep this product away from wet locations such as bathtubs, sinks, laundries, wet basements, fish tanks, and swimming pools.

Use only accessories recommended by Atlona to avoid fire, shock, or other hazards.

Unplug the product before cleaning. Use a damp cloth for cleaning and not cleaning fluid or aerosols. Such products could enter the unit and cause damage, fire, or electric shock. Some substances may also mar the finish of the product.

Never open, remove unit panels, or make any adjustments not described in this manual. Attempting to do so could expose you to dangerous electrical shock or other hazards. It may also cause damage to your AT-HD-V1616M. Opening the product will void the warranty.

Do not attempt to service the unit. Disconnect the product and contact your authorized Atlona reseller or contact Atlona directly.

## Warranty

### Limited Warranty

Atlona Technologies warrants that (a) its products (the AT-HD-V1616M) will perform substantially in accordance with the accompanying written materials for a period of 3 years from the date of receipt and (b) that the product will be free from defects in materials and workmanship under normal use and service for a period of 3 years. In the event applicable law imposes any implied warranties, the implied warranty period is limited to 3 years from the date of receipt. Some jurisdictions do not allow such limitations on duration of an implied warranty, so the above limitation may not apply to customers that fall within those areas.

### Customer Remedies

Atlona Technologies' and its suppliers' entire liability and Customer's exclusive remedy shall be, at Atlona Technologies' decision, either return of the price paid for the product, repair, or replacement of the product that does not meet this Limited Warranty and which is returned to Atlona Technologies with a copy of the Customer's receipt. This Limited Warranty is void if failure of the product has resulted from accident, abuse, misapplication, or natural occurrence. In example but not limited to: power surges (electrical storms, local power outage), dropping the product (or items on the product), contact with fluids, and physical misconduct (i.e. kicking or punching). Any replacement product will be warranted for the remainder of the original warranty period.

### No other warranties

To the maximum extent permitted by applicable law, Atlona Technologies and its suppliers disclaim all other warranties, either expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, with regard to the product and any related written materials. This Limited Warranty gives customer specific legal rights. Customers may have other rights depending on the jurisdiction.

### No liability for damages

To the maximum extent permitted by applicable law, in no event shall Atlona Technologies or its suppliers be liable for any damages arising out of the use of or inability to use this product, even if Atlona Technologies has been advised of the possibility of such damages. Such damages include but are not limited to: special, incidental, consequential, or indirect damages for personal injury, loss of business profits, business interruption, loss of business information, or any other pecuniary loss. Atlona Technologies' and its suppliers' entire liability under any provision of this agreement shall be limited to the amount actually paid by you for the product. Some Jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damage. The above limitations may not apply to you in such jurisdictional cases.

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## **Atlona Product Registration**

Thank you for purchasing this Atlona product. - We hope you enjoy it and will take an extra few moments to register your new purchase.

Registration creates an ownership record if your product is lost or stolen and helps ensure you'll receive notification of performance issues and firmware updates.

At Atlona, we respect and protect your privacy, assuring you that your registration information is completely secure. Atlona product registration is completely voluntary and failure to register will not diminish your limited warranty rights.

**To register go to:** <http://www.atlona.com/registration>